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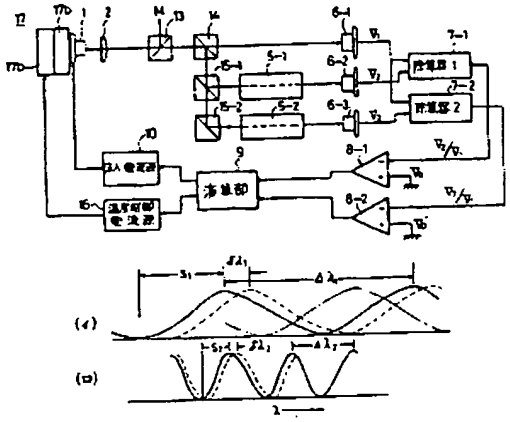
TITLE : WAVELENGTH STABILIZER OF SEMICONDUCTOR LASER



ABSTRACT : PURPOSE: To stabilize an oscillation wavelength by a method wherein two pairs of interferometers having different wavelength space of interference fringes are combined, the interference wave curve of the proper interferometer is selected and transferred on occasion according to the width of a wavelength fluctuation range, variation is detected with high accuracy and the injected currents and temperature of a semiconductor are controlled.

CONSTITUTION: Two of Fabry-Perot type or optical fiber type interferometers are used as interferometers 5-1 and 5-2. Half mirrors, photoreceptors 6, dividers 7 and comparators 8 required to these interferometers are disposed respectively. In an arithmetic section 9, the voltage rations V_2/V_1 and V_3/V_1 of the first and second dividers are monitored, the voltage ratio transfers from one voltage ratio to the other voltage ratio in response to the range of fluctuation of an oscillation wavelength with the lapse of time, and the control numerical value of control currents to the injected currents and temperature of a semiconductor laser for keeping the oscillation wavelength at a fixed value is arithmetically operated and output. The semiconductor laser 1 is supplied with injected currents from an injected current source 10 by the control numerical value, and a temperature regulator 17 is supplied with temperature control currents from a temperature control current source 16.